

United States Department of Agriculture Natural Resources Conservation Service

Ecological Site Description

Site Type: Rangeland

Site Name: Saline Upland (SU) 5-9" Big Horn Basin Precipitation Zone

Site ID: 032XY144WY

Major Land Resource Area: 32 – Northern Intermountain Desertic Basins

Physiographic Features

This site occurs on nearly level to moderately sloping land.

Landform: Hill sides, alluvial fans & stream terraces

Aspect: N/A

	<u>Minimum</u>	<u>Maximum</u>
Elevation (feet):	3700	6000
Slope (percent):	0	15
Water Table Depth (inches):	None within 60 inches	
Flooding:		
Frequency:	very rare	rare
Duration:	ex. brief	brief
Ponding:		
Depth (inches):	0	0
Frequency:	None	None
Duration:	None	None
Runoff Class:	negligible	medium

Climatic Features

Annual precipitation ranges from 5-9 inches per year. The normal precipitation pattern shows peaks in May and June and a secondary peak in September. This amounts to about 50% of the mean annual precipitation. Much of the moisture that falls in the latter part of the summer is lost by evaporation and much of the moisture that falls during the winter is lost by sublimation. Average snowfall is about 20 inches annually. Wide fluctuations may occur in yearly precipitation and result in more dry years than those with more than normal precipitation.

Temperatures show a wide range between summer and winter and between daily maximums and minimums, due to the high elevation and dry air, which permits rapid incoming and outgoing radiation. Cold air outbreaks from Canada in winter move rapidly from northwest to southeast and account for extreme minimum temperatures. Chinook winds may occur in winter and bring rapid rises in temperature. Extreme storms may occur during the winter, but most severely affect ranch operations during late winter and spring.

High winds are generally blocked from the basin by high mountains, but can occur in conjunction with an occasional thunderstorm.

Growth of native cool-season plants begins about April 1 and continues to about July 1. Cool weather and moisture in September may produce some green up of cool season plants that will continue to late October.

The following information is from the “Emblem” climate station:

	<u>Minimum</u>	<u>Maximum</u>	<u>5 yrs. out of 10 between</u>
Frost-free period (days):	98	171	May 13 – September 19
Freeze-free period (days):	120	184	May 1– October 5
Mean Annual Precipitation (inches):	3.22	10.97	

Mean annual precipitation: 7.42 inches

Mean annual air temperature: 45.01°F (31.2°F Avg. Min. to 58.7°F Avg. Max.)

For detailed information visit the Natural Resources Conservation Service National Water and Climate Center at <http://www.wcc.nrcs.usda.gov/> website. Other climate station(s) representative of this precipitation zone include “Basin”, “Deaver”, “Lovell”, and “Worland”.

Influencing Water Features

Wetland Description:	<u>System</u>	<u>Subsystem</u>	<u>Class</u>	<u>Sub-class</u>
None	None	None	None	None

Stream Type: None

Representative Soil Features

The soils of this site are generally from 8” to 20” deep but may exceed 60” in depth. They are well-drained soils formed in alluvium from sodic or alkaline materials. These soils have moderate to slow permeability and are moderately to strongly saline and/or alkaline. The surface soil will vary from 2 to 6 inches in thickness. Some soils may contain more soluble salts in the subsoils than in the surface soils. The soil characteristic having the most influence on the plant community is the high quantity of soluble salts.

Major Soil Series correlated to this site include: Muff, Greybull, Persayo, Uffens, Stutzman, Chipeta, Deaver, Sayles, Cestnik, Torchlight, and Bributte

Other Soil Series correlated in MLRA 32 to this site include:

Parent Material Kind: alluvium

Parent Material Origin: sandstone, shale

Surface Texture: loam, very fine sandy loam, fine sandy loam, clay loam, silty clay loam, silt loam

Surface Texture Modifier: none

Subsurface Texture Group: clay, clay loam, sandy clay loam,

Surface Fragments ≤ 3” (% Cover): 0

Surface Fragments > 3” (%Cover): 0

Subsurface Fragments ≤ 3” (% Volume): 0

Subsurface Fragments > 3” (% Volume): 0

	<u>Minimum</u>	<u>Maximum</u>
Drainage Class:	well	well
Permeability Class:	slow	moderate

Site Type: Rangeland
MLRA: 32 – Northern Intermountain Desertic Basins

Saline Upland (SU) 5-9 BH
R032XY144WY

Depth (inches):	8	>60
Electrical Conductivity (mmhos/cm) ≤ 20" :	4	16
Sodium Absorption Ratio ≤ 20" :	8	> 16
Soil Reaction (1:1 Water) ≤ 20" :	7.4	11.0
Soil Reaction (0.1M CaCl₂) ≤ 20" :	NA	NA
Available Water Capacity (inches) ≤ 30" :	1.4	6.3
Calcium Carbonate Equivalent (percent) ≤ 20" :	0	15

Plant Communities

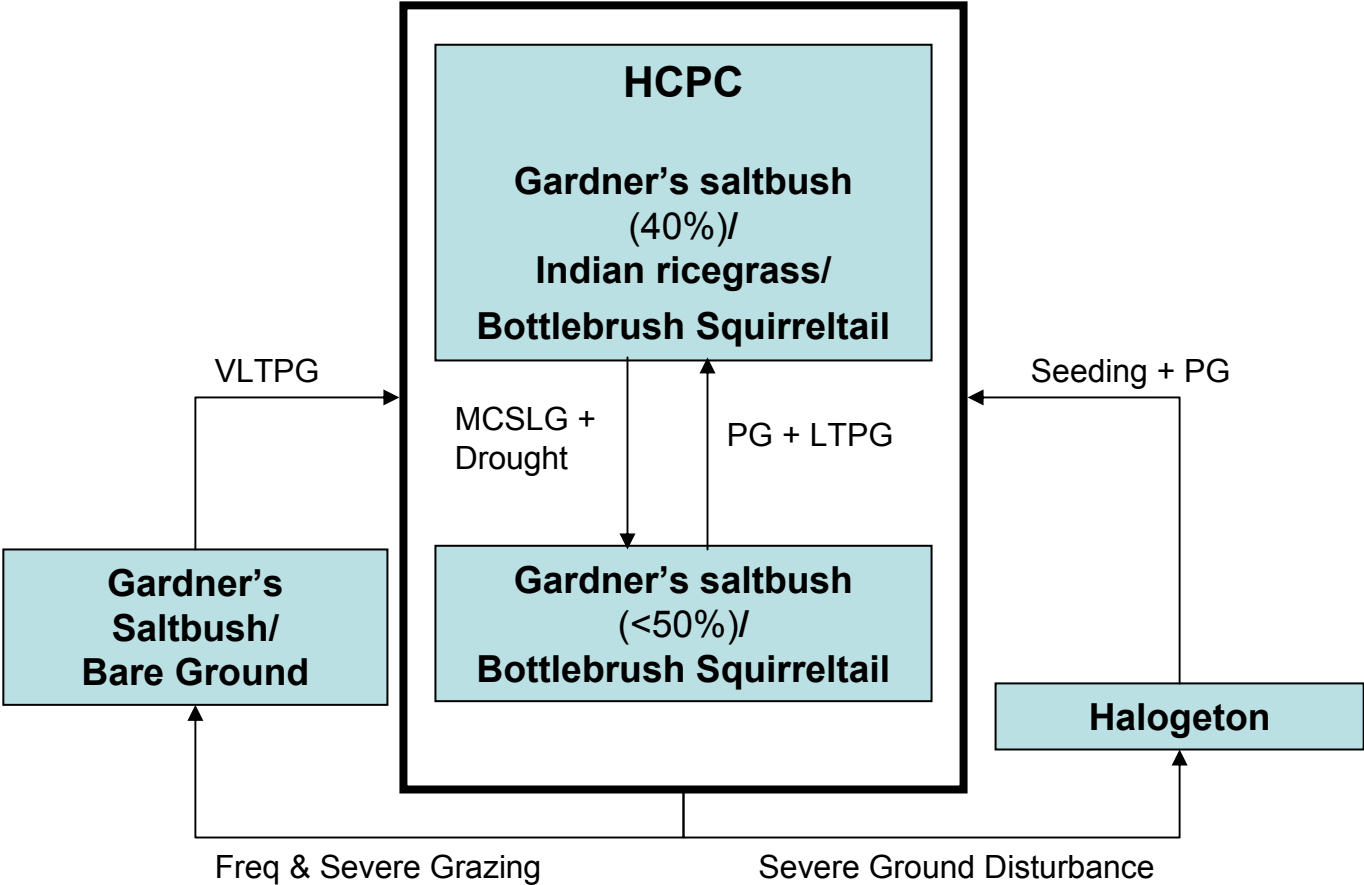
Ecological Dynamics of the Site:

Potential vegetation on this site is dominated by salt tolerant plants and drought resistant mid cool-season perennial grasses. The expected potential composition for this site is about 50% grasses, 10% forbs and 40% woody plants. The composition and production will vary naturally due to historical use, fluctuating precipitation and fire frequency.

As this site deteriorates, species such as birdfoot sagebrush and greasewood will increase. Weedy annuals will invade. Cool season grasses such as Indian ricegrass, bottlebrush squirreltail, and rhizomatous wheatgrasses will decrease in frequency and production.

The Historic Climax Plant Community (description follows the plant community diagram) has been determined by study of rangeland relic areas, or areas protected from excessive disturbance. Trends in plant communities going from heavily grazed areas to lightly grazed areas, seasonal use pastures, and historical accounts have also been used.

The following is a State and Transition Model Diagram that illustrates the common plant communities (states) that can occur on the site and the transitions between these communities. The ecological processes will be discussed in more detail in the plant community narratives following the diagram.



- BM** - Brush Management (fire, chemical, mechanical)
- Freq. & Severe Grazing** - Frequent and Severe Utilization of the Cool-season Mid-grasses during the Growing Season
- GLMT** - Grazing Land Mechanical Treatment
- LTPG** - Long-term Prescribed Grazing
- MCSLG** - Moderate, Continuous Season-long Grazing
- NU, NF** - No Use and No Fire
- PG** - Prescribed Grazing (proper stocking rates with adequate recovery periods during the growing season)
- VLTPG** - Very Long-term Prescribed Grazing (could possibly take generations)
- WF** – Wildfire

Plant Community Composition and Group Annual Production
Reference Plant Community (HCPC)

COMMON NAME/GROUP NAME	SCIENTIFIC NAME	SYMBOL	Annual Production (Normal Year)		
			Total: 350		
			Group	lbs./acre	% Comp.
GRASSES AND GRASS-LIKES					
GRASSES/GRASSLIKES					
Indian ricegrass	Achnatherum hymenoides	ACHY	1	53 - 105	15 - 30
Bottlebrush squirreltail	Elymus elymoides	ELELE	2	53 - 105	15 - 30
Western wheatgrass	Pascopyrum smithii	PASM	3	18 - 35	5 - 10
Sandberg bluegrass	Poa secunda	POSE	4	0 - 18	0 - 5
other perennial grasses (native)		2GP	5	0 - 18	0 - 5
FORBS			6	4 - 35	1 - 10
Milkvetch	Astragalus spp.	ASTRA	6	0 - 18	0 - 5
Salsify	Tragopogon spp.	TRPO	6	0 - 18	0 - 5
Wild onion	Allium textile	ALTE	6	0 - 18	0 - 5
Woody aster	Xylorhiza spp.	XYLOR	6	0 - 18	0 - 5
other perennial forbs (native)		2FP	6	0 - 18	0 - 5
TREES/SHRUBS					
Gardner's saltbush	Atriplex gardneri	ATGA	7	70 - 140	20 - 40
Bud sagebrush	Picrothamnus spp.	PICRO	8	0 - 35	0 - 10
MISC. SHRUBS			9	4 - 35	1 - 10
Birdfoot sagebrush	Artemisia pedatifida	ARPE6	9	0 - 18	0 - 5
Greasewood	Sarcobatus vermiculatus	SAVE4	9	0 - 18	0 - 5
Winterfat	Krascheninnikovia lanata	KRAL2	9	0 - 18	0 - 5
other shrubs & half shrubs (native)		2SHRUB	9	0 - 18	0 - 5

This list of plants and their relative proportions are based on near normal years. Fluctuations in species composition and relative production may change from year to year dependent upon precipitation or other climatic factors.

Plant Community Narratives

Following are the narratives for each of the described plant communities. These plant communities may not represent every possibility, but they probably are the most prevalent and repeatable plant communities. The plant composition tables shown above have been developed from the best available knowledge at the time of this revision. As more data is collected, some of these plant communities may be revised or removed, and new ones may be added. None of these plant communities should necessarily be thought of as “Desired Plant Communities”. According to the USDA NRCS National Range and Pasture Handbook, Desired Plant Communities (DPC’s) will be determined by the decision-makers and will meet minimum quality criteria established by the NRCS. The main purpose for including any description of a plant community here is to capture the current knowledge and experience at the time of this revision.

Gardner’s saltbush/Indian ricegrass/Bottlebrush Squirreltail Plant Community

The interpretive plant community for this site is the Historic Climax Plant Community. This state evolved with grazing by large herbivores and droughty saline and/or alkali soils. This plant community can be found on areas that are properly managed with grazing and on areas receiving short periods of rest. Potential vegetation is about 50% grasses or grass-like plants, 10% forbs, and 40% woody plants.

Gardner’s saltbush dominates this state. Other salt tolerant shrubs include greasewood and birdfoot sagebrush. The major grasses include Indian ricegrass, bottlebrush squirreltail, Sandberg bluegrass, and rhizomatous wheatgrasses. A variety of forbs also occurs in this state and plant diversity is high (see Plant Composition Table).

The total annual production (air-dry weight) of this state is about 350 pounds per acre, but it can range from about 200 lbs. /acre in unfavorable years to about 550 lbs. /acre in above average years.

The following is the growth curve of this plant community expected during a normal year:

Growth curve number: WYO501

Growth curve name: 5-9BH, UPLAND SITES

Growth curve description: ALL UPLAND SITES

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	0	0	15	50	20	5	0	10	0	0	0

(Monthly percentages of total annual growth)

This state is fragile, but well adapted to the Northern Intermountain Desertic Basins climatic conditions. The diversity in plant species allows for high drought tolerance. This is a sustainable plant community, but is difficult to reestablish when damaged. (Site/soil stability, watershed function, and biologic integrity).

Transitions or pathways leading to other plant communities are as follows:

- Moderate, Continuous Season-Long grazing will convert this plant community to the *Gardner’s Saltbush/Bottlebrush Squirreltail Plant Community*.
- Severe ground disturbance will convert this state to the *Halogeton Plant Community*.

Gardner’s Saltbush/Bottlebrush Squirreltail Plant Community

Historically, this plant community evolved under grazing by large ungulates. Currently this vegetation state is found under moderate season-long grazing by livestock. Prolonged drought can also play an important role and will exacerbate these conditions. Gardner’s saltbush and bottlebrush squirreltail

are major components of this plant community. Cool-season grasses make up the majority of the understory with the balance made up of short warm-season grasses, annual cool-season grasses, and miscellaneous forbs.

Dominant grasses include bottlebrush squirreltail and Sandberg bluegrass. Forbs commonly found in this plant community include Smooth woodyster, Cous biscuitroot, Wild onion, and leafy wildparsley. Plains pricklypear and winterfat can also occur.

When compared to the Historic Climax Plant Community, birdfoot sagebrush has increased. Indian ricegrass has decreased and may occur in only trace amounts. In addition, winterfat may or may not have changed depending on the season of use.

The total annual production (air-dry weight) of this state is about 250 pounds per acre, but it can range from about 150 lbs. /acre in unfavorable years to about 350 lbs. /acre in above average years.

The following is the growth curve expected during a normal year:

Growth curve number: WYO501

Growth curve name: 5-9BH, UPLAND SITES

Growth curve description: ALL UPLAND SITES

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	0	0	15	50	20	5	0	10	0	0	0

(Monthly percentages of total annual growth)

This plant community is relatively resistant to change. The herbaceous species present are well adapted to grazing; however, species composition can be altered through long-term overgrazing. The herbaceous component is mostly intact and plant vigor and replacement capabilities are sufficient. Water flow patterns and litter movement may occur, but is not extensive. Incidence of pedestalling is minimal. Soils are mostly stable and the surface shows minimum soil loss. The watershed is functioning and the biotic community is intact.

Transitional pathways leading to other plant communities are as follows:

- Prescribed grazing will prevent further deterioration and over the long-term may return this state to near *Historic Climax Plant Community*.
- Frequent and severe grazing will convert this state to *Gardner Saltbush/Bare Ground Plant Community*.
- Severe ground disturbance will convert this state to the *Halogeton Plant Community*.

Gardner's Saltbush/Bare Ground Plant Community

This plant community can occur where sites are subjected to continuous yearlong grazing. Gardner's saltbush dominates this state and in some cases comprises almost 100% of the plant community. The interspaces between plants have expanded significantly leaving the amount of bare ground prevalent and the soil surface exposed to erosive elements.

Cool season grasses have been eliminated or greatly reduced. Noxious weeds such as Russian knapweed and halogeton may invade into the large openings. When compared to the HCPC, plant production is greatly diminished due to the excessive amount of bare ground.

The total annual production (air-dry weight) of this state is about 100 pounds per acre, but it can range from about 75 lbs./acre in unfavorable years to about 200 lbs./acre in above average years.

The following is the growth curve of this plant community expected during a normal year:

Growth curve number: WYO501
Growth curve name: 5-9BH, UPLAND SITES
Growth curve description: ALL UPLAND SITES

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	0	0	15	50	20	5	0	10	0	0	0

(Monthly percentages of total annual growth)

This plant community is resistant to change as the stand becomes more decadent. These areas may actually be more resistant to fire as less fine fuels are available and the bare ground between the sagebrush plants is increased. Continued frequent and severe grazing or the removal of grazing does not seem to affect the plant composition or structure of the plant community. Plant diversity is extremely low. The plant vigor is diminished and replacement capabilities are severely reduced due to the decrease in the number of cool-season grasses. Plant litter is noticeably less when compared to the HCPC.

Soil erosion is accelerated because of increased bare ground. Water flow patterns and pedestalling are obvious. Infiltration is reduced and runoff is increased. Rill channels may be noticeable in the interspaces and gullies may be establishing where rills have concentrated down slope.

Transitional pathways leading to other plant communities are as follows:

- Very long term prescribed grazing may eventually return this plant community at or near the HCPC.
- Severe ground disturbance will convert this state to the *Halogeton Plant Community*.

Halogeton Plant Community

This plant community is a result of severe ground disturbance. Halogeton, bottlebrush squirreltail, and bare ground are a major part of this state. Sparse saline tolerant grasses can be found in the understory with the balance made up of annual forbs.

The total annual production (air-dry weight) of this state is about 75 pounds per acre, but it can range from about 50 lbs./acre in unfavorable years to about 150 lbs./acre in above average years.

The following is the growth curve of this plant community expected during a normal year:

Growth curve number: WYO501
Growth curve name: 5-9BH, UPLAND SITES
Growth curve description: ALL UPLAND SITES

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	0	0	15	50	20	5	0	10	0	0	0

(Monthly percentages of total annual growth)

The state is vulnerable to excessive erosion. The biotic integrity of this plant community is at risk depending on how far a shift has occurred in plant composition toward halogeton and annual forbs. The watershed is at risk as bare ground increases.

Transitional pathways leading to other plant communities are as follows:

- Re-seeding followed by deferment for 1 to 2 years as part of a Prescribed Grazing plan will return this plant community to near *Historic Climax Plant Community (Gardner's Saltbush/Bunchgrass State)* although halogeton will remain a part of the plant community. Additional deferment may be necessary and should be prescribed on an individual site basis.

Ecological Site Interpretations

Animal Community – Wildlife Interpretations

Historic Climax Plant Community: The predominance of woody plants in this plant community provides winter grazing for mixed-feeders, such elk, and antelope. Suitable thermal and escape cover for these animals are limited due to the low quantities of tall woody plants. When found adjacent to sagebrush-dominated states, this plant community may provide lek sites for sage grouse. Other birds that would frequent this plant community include western meadowlarks, horned larks, and golden eagles. Some grassland obligate small mammals would occur here.

Gardner's Saltbush/Bottlebrush Squirreltail Plant Community: The combination of shrubs, grasses, and forbs can provide a forage source for large animals. Suitable thermal and escape cover for these animals are limited due to the low quantities of tall woody plants. When found adjacent to sagebrush dominated states, this plant community may provide lek sites for sage grouse. Other birds that would frequent this plant community include western meadowlarks, horned larks, and golden eagles. Some grassland obligate small mammals would occur here.

Gardner's Saltbush/Bare Ground Plant Community: This plant community exhibits a low level of plant species diversity. It may provide some forage value for antelope, but in most cases it is not a desirable plant community to select as a wildlife habitat management objective.

Halogeton Plant Community: This plant community exhibits a low level of plant species diversity. It is not a desirable plant community to select as a wildlife habitat management objective.

Animal Preferences (Quarterly - 1,2,3,4) for commonly occurring plants in MLRA 32, 5-9 inch Bighorn Basin

COMMON NAME/ GROUP NAME	SCIENTIFIC NAME	SCIENTIFIC SYMBOL	Cattle	Sheep	Horses	Deer	Antelope
GRASSES/GRASSLIKES							
Alkali bluegrass	Poa juncifolia (syn. P. secunda)	POJU (POSE)	DDDD	PPPP	DDDD	PPPP	PPPP
Alkali cordgrass	Spartina gracilis	SPGR	DDDD	UUUU	DDDD	UUUU	UUUU
Alkali sacaton	Sporobolus airoides	SPA1	PPPP	DDDD	PPPP	DDDD	DDDD
Baltic rush	Juncus balticus	JUBA	DDDD	UUUU	DDDD	UUUU	UUUU
Basin wildrye	Leymus cinereus	LECI4	PPPP	PPPP	PPPP	DDDD	DDDD
Beaked sedge	Carex rostrata	CAR06	DDDD	UUUU	DDDD	UUUU	UUUU
Blue grama	Bouteloua gracilis	BOGR2	DDDD	DDDD	DDDD	DDDD	DDDD
Bluebunch wheatgrass	Pseudoroegneria spicata	PSSP6	PPPP	PPPP	PPPP	DDDD	DDDD
Bottlebrush squiiretail	Elymus elymoides	ELEL5	DDDD	DDDD	DDDD	UUUU	DDDD
Canada wildrye	Elymus canadensis	ELCA4	PPPP	PPPP	PPPP	DDDD	DDDD
Golden sedge	Carex aurea	CAAU3	DDDD	DDDD	DDDD	UUUU	UUUU
Indian ricegrass	Achnatherum hymenoides	ACHY	PPPP	PPPP	PPPP	PPPP	PPPP
Inland saltgrass	Distichlis spicata	DISP	UUUU	UUUU	UUUU	UUUU	UUUU
Inland sedge	Carex interior	CAIN11	DDDD	DDDD	DDDD	UUUU	UUUU
Nebraska sedge	Carex nebrascensis	CANE2	PPPP	PPPP	PPPP	DDDD	DDDD
Needleandthread	Hesperostipa comata	HECO26	PPPP	PPPP	PPPP	PPPP	PPPP
Nuttall's alkilgrass	Puccinellia nuttalliana	PUNU2	PPPP	PPPP	PPPP	PPPP	PPPP
Prairie junegrass	Koeleria macrantha	KOMA	DDDD	DDDD	DDDD	DDDD	DDDD
Prairie sandreed	Calamovilfa longifolia	CALO	PPPP	UUUU	PPPP	UUUU	UUUU
Red threeawn	Aristida purpurea	ARPUL	UUUU	UUUU	UUUU	UUUU	UUUU
Sand dropseed	Sporobolus cryptandrus	SPCR	DDDD	DDDD	DDDD	UUUU	UUUU
Sandberg bluegrass	Poa secunda	POSE	DDDD	DDDD	DDDD	DDDD	DDDD
Slender wheatgrass	Elymus trachycaulis	ELTR7	PPPP	DDDD	PPPP	DDDD	DDDD
Streambank wheatgrass	Elymus lanceolatus	ELLA3	DDDD	DDDD	DDDD	DDDD	DDDD
Thickspike wheatgrass	Elymus lanceolatus ssp. lanceolatus	ELLAL	DDDD	DDDD	DDDD	DDDD	DDDD
Threadleaf sedge	Carex filifolia	CAFI	DDDD	DDDD	DDDD	DDDD	DDDD
Threeawns	Aristida spp.	ARIST	UUUU	UUUU	UUUU	UUUU	UUUU
Tufted hairgrass	Deschampsia caespitosa	DECA18	PPPP	PPPP	PPPP	DDDD	DDDD
Upland sedge	Carex spp.	CAREX	DDDD	DDDD	DDDD	DDDD	DDDD
Water sedge	Carex aquatilis	CAAQ	DDDD	UUUU	DDDD	UUUU	UUUU
Western wheatgrass	Pascopyrum smithii	PASM	DDDD	DDDD	DDDD	DDDD	DDDD
FORBS							
Alkali seepweed	Suaeda spp.	AGOSE	UUUU	UUUU	UUUU	UUUU	UUUU
Arrowgrass	Triglochin spp.	TRIGL	TTTT	TTTT	TTTT	TTTT	TTTT
Asters	Eucephalus spp.	EUCEP2	UUUU	UUUU	UUUU	UUUU	UUUU
Biscuitroot	Lomatium spp.	LOMAT	DDDD	DDDD	UUUU	DDDD	DDDD
Blue-eyed grass	Sisyrinchium spp.	SISYR	UUUU	UUUU	UUUU	UUUU	UUUU
Buckwheats	Eriogonum spp.	ERIOG	UUUU	DDDD	UUUU	UUUU	UUUU
Dock	Rumex spp.	RUMEX	UUUU	UUUU	UUUU	UUUU	UUUU
Evening primrose	Oenothera caespitosa	OECA10	UUUU	UUUU	UUUU	UUUU	UUUU
False carrot	Turgenia spp.	TURGE	UUUU	DDDD	UUUU	UUUU	UUUU
Fleabanes	Erigeron spp.	ERIGE2	DDDD	DDDD	DDDD	DDDD	DDDD
Horsetails	Equisetum spp.	EQUIS	UUUU	UUUU	TTTT	UUUU	UUUU
Iris	Iris spp.	IRIS	UUUU	UUUU	UUUU	UUUU	UUUU
Larkspur (poisonous in spring before flowering)	Delphinium spp.	DELPH	DDDD	DDDD	DDDD	DDDD	DDDD
Milkvetch	Astragalus spp.	ASTRA	DDDD	DDDD	DDDD	DDDD	DDDD
Nailwort	Paronychia spp.	PARON	UUUU	UUUU	UUUU	UUUU	UUUU
Paintbrush	Castilleja spp.	CAST	DDDD	DDDD	DDDD	DDDD	DDDD
Penstemons	Penstemon spp.	PENST	PPPP	PPPP	PPPP	PPPP	PPPP
Phlox	Phlox spp.	PHLOX	UUUU	UUUU	UUUU	UUUU	UUUU
Princesplume	Stanleya spp.	STANL	TTTT	TTTT	TTTT	TTTT	TTTT
Pussytoes	Antennaria spp.	ANTEN	UUUU	UUUU	UUUU	UUUU	UUUU
Salsify	Tragopogon porrifolius	TRPO	UUUU	UUUU	UUUU	UUUU	UUUU
Scarlet globemallow	Sphaeralcea coccinea	SPCO	DDDD	DDDD	DDDD	DDDD	DDDD
Stemless hymenoxys	Tetranneuris acaulis	TEACA2	UUUU	UUUU	UUUU	UUUU	UUUU
Stonecrop	Sedum spp.	SEDUM	UUUU	UUUU	UUUU	UUUU	UUUU
Toadflax	Comandra umbellata	COUMP	UUUU	UUUU	UUUU	UUUU	UUUU
Wild onion	Allium textile	ALTE	DDDD	DDDD	DDDD	DDDD	DDDD
Woody aster	Xylorhiza spp.	XYLOR	TTTT	TTTT	TTTT	TTTT	TTTT
TREES, SHRUBS & HALF-SHRUBS							
Big sagebrush	Artemisia tridentata	ARTR2	DDDD	DDDD	UUUU	DDDD	DDDD
Birdfoot sagebrush	Artemisia pedatifida	ARPE6	UUUU	UUUU	UUUU	UUUU	UUUU
Black sagebrush	Artemisia nova	ARNO4	UUUU	PPPP	UUUU	PPPP	PPPP
Bud sagebrush	Picrothamnus desertorum	PIDE4	PPPP	PPPP	DDDD	PPPP	PPPP
Cottonwoods (sprouts)	Populus spp.	POPUL	PPPP	PPPP	PPPP	PPPP	UUUU
Fourwing saltbush	Atriplex canescens	ATCA2	PPPP	PPPP	PPPP	PPPP	PPPP
Gardners saltbush	Atriplex gardneri	ATGA	PPPP	PPPP	DDDD	PPPP	PPPP
Greasewood (toxic in large amounts)	Sarcobatus vermiculatus	SAVE4	DDDD	DDDD	UUUU	DDDD	DDDD
Junipers	Juniperus scopulorum	JUSC2	UUUU	UUUU	UUUU	DDDD	UUUU
Green rabbitbrush	Chrysothamnus viscidiflorus	CHV18	DDDD	DDDD	UUUU	PPPP	PPPP
Rubber rabbitbrush	Ericameria nauseosa	ERNA10	UUUU	PPPP	UUUU	DDDD	PPPP
Shadscale	Atriplex confertifolia	ATCO	UUUU	UUUU	UUUU	UUUU	UUUU
Silver buffaloberry	Shepherdia argentea	SHAR	UUUU	UUUU	UUUU	UUUU	UUUU
Silver sagebrush	Artemisia cana	ARCA13	DDDD	DDDD	DDDD	PPPP	PPPP
Skunkbush sumac	Rhus trilobata	RHTR	DDDD	DDDD	UUUU	DDDD	DDDD
Spiny hopsage	Grayia spinesa	GRSP	UUUU	UUUU	UUUU	UUUU	UUUU
Wildrose	Rosa woodsii var. woodsii	ROWOW	DDDD	DDDD	UUUU	DDDD	DDDD
Willows	Salix spp.	SALIX	PPPP	PPPP	DDDD	PPPP	UUUU
Winterfat	Krascheninnikovia lanata	KRAL2	PPPP	PPPP	PPPP	PPPP	PPPP
Yucca	Yucca spp.	YUCCA	DDDD	DDDD	UUUU	DDDD	DDDD

N = not used; U = undesirable; D = desirable; P = preferred; T = toxic

Animal Community – Grazing Interpretations

The following table lists suggested stocking rates for cattle under continuous season-long grazing under normal growing conditions. These are conservative estimates that should be used only as guidelines in the initial stages of the conservation planning process. Often, the current plant composition does not entirely match any particular plant community (as described in this ecological site description). Because of this, a field visit is recommended, in all cases, to document plant composition and production. More precise carrying capacity estimates should eventually be calculated using this information along with animal preference data, particularly when grazers other than cattle are involved. Under more intensive grazing management, improved harvest efficiencies can result in an increased carrying capacity. If distribution problems occur, stocking rates must be reduced to maintain plant health and vigor.

Plant Community	Production (lb. /ac)	Carrying Capacity* (AUM/ac)
Historic Climax Plant Community	200-550	.10
Gardner's Saltbush/Bottlebrush Squirreltail	150-350	.08
Gardner's Saltbush/Bare Ground	75-200	.05
Halogeton Plant Community	50-150	.03

* - Continuous, season-long grazing by cattle under average growing conditions.

Grazing by domestic livestock is one of the major income-producing industries in the area. Rangeland in this area may provide yearlong forage for cattle, sheep, or horses. During the dormant period, the forage for livestock use needs to be supplemented with protein because the quality does not meet minimum livestock requirements.

Hydrology Functions

Water and salinity are the principal factors limiting forage production on this site. This site is dominated by soils in hydrologic group B and C, with localized areas in hydrologic group D. Infiltration ranges from slow to moderate. Runoff potential for this site varies from moderate to high depending on soil hydrologic group and ground cover. In many cases, areas with greater than 75% ground cover have the greatest potential for high infiltration and lower runoff. An example of an exception would be where short-grasses form a strong sod and dominate the site. Areas where ground cover is less than 50% have the greatest potential to have reduced infiltration and higher runoff (refer to Part 630, NRCS National Engineering Handbook for detailed hydrology information).

Rills and gullies should not typically be present. Water flow patterns should be barely distinguishable if at all present. Pedestals are only slightly present in association with bunchgrasses. Litter typically falls in place, and signs of movement are not common. Chemical and physical crusts may be present. Cryptogamic crusts are present, but only cover 1-2% of the soil surface.

Recreational Uses

This site provides some hunting opportunities for upland game species.

Wood Products

No appreciable wood products are present on the site.

Other Products

None noted.

Supporting Information

Associated Sites

Loamy	032XY122WY
Impervious Clay	032XY118WY

Similar Sites

() – Saline Upland 10-14" Foothills and Basins East P.Z., 032XY344WY has higher production.

Inventory Data References (narrative)

Information presented here has been derived from NRCS inventory data. Field observations from range trained personnel were also used. Other sources used as references include: USDA NRCS Water and Climate Center, USDA NRCS National Range and Pasture Handbook, and USDA NRCS Soil Surveys from various counties.

Inventory Data References

<u>Data Source</u>	<u>Number of Records</u>	<u>Sample Period</u>	<u>State</u>	<u>County</u>
SCS-RANGE-417	19	1965-1986	WY	Park & others

State Correlation

This site occurs entirely within Wyoming.

Type Locality

Field Offices

Cody, Greybull, Lovell, Powell, Thermopolis, Worland

Relationship to Other Established Classifications

Other References

Site Description Approval

State Range Management Specialist

Date